

### CLAIMS

1           1.       (currently amended) In a spread-spectrum receiver, a method for processing a received  
2 analog spread-spectrum signal, comprising:

3               determining whether to attenuate the received analog spread-spectrum signal;

4               based on the attenuation determination, selectively attenuating the received analog spread-  
5 spectrum signal to generate a selectively attenuated analog spread-spectrum signal;

6               digitizing the selectively attenuated analog spread-spectrum signal to generate a digital spread-  
7 spectrum signal;

8               filtering the digital spread-spectrum signal in an attempt to compensate for interference in the  
9 received analog spread-spectrum signal to generate a filtered digital spread-spectrum signal; and

10              de-spreading the filtered digital spread-spectrum signal to generate a de-spread digital signal,  
11 wherein;

12                      the attenuation determination is based on the amplitude of the digital spread-spectrum  
13 signal prior to the interference-compensation filtering and the de-spreading; and

14                      the attenuation determination is independent of any determination of bit error rate.

1           2.       (original) The invention of claim 1, wherein the filtering attempts to compensate for off-  
2 channel interference in the received analog spread-spectrum signal.

1           3.       (original) The invention of claim 1, wherein the selectively attenuated analog spread-  
2 spectrum signal has a negative signal-to-noise ratio (SNR).

1           4.       (original) The invention of claim 1, wherein:  
2               the received analog spread-spectrum signal is attenuated when the amplitude of the digital  
3 spread-spectrum signal is greater than an upper threshold; and  
4               the received analog spread-spectrum signal is not attenuated when the amplitude of the digital  
5 spread-spectrum signal is less than a lower threshold, wherein the upper threshold is greater than the  
6 lower threshold.

1           5.       (original) The invention of claim 4, wherein the upper threshold is greater than the lower  
2 threshold by an amount greater than the level of selective attenuation in order to provide hysteresis in the  
3 attenuation determination.

1           6.       (original) The invention of claim 1, wherein:  
2           the received analog spread-spectrum signal is a radio frequency (RF) signal; and  
3           further comprising:  
4                 converting the RF signal to an intermediate frequency (IF) prior to the digitization; and  
5                 converting the IF signal to baseband after digitization.

1           7.       (original) The invention of claim 6, wherein the filtering and the de-spreading are  
2           implemented at baseband.

1           8.       (original) The invention of claim 1, wherein:  
2           the filtering attempts to compensate for off-channel interference in the received analog spread-  
3           spectrum signal;  
4           the selectively attenuated analog spread-spectrum signal has a negative signal-to-noise ratio  
5           (SNR);  
6           the received analog spread-spectrum signal is attenuated when the amplitude of the digital  
7           spread-spectrum signal is greater than an upper threshold;  
8           the received analog spread-spectrum signal is not attenuated when the amplitude of the digital  
9           spread-spectrum signal is less than a lower threshold;  
10          the upper threshold is greater than the lower threshold by an amount greater than the level of  
11          selective attenuation in order to provide hysteresis in the attenuation determination;  
12          the received analog spread-spectrum signal is a radio frequency (RF) signal;  
13          further comprising:  
14                 converting the RF signal to an intermediate frequency (IF) prior to the digitization; and  
15                 converting the IF signal to baseband after digitization; and  
16          the filtering and the de-spreading are implemented at baseband.

1           9.       (currently amended) A spread-spectrum receiver, comprising:  
2           a variable attenuator adapted to selectively attenuate a received analog spread-spectrum signal to  
3           generate a selectively attenuated analog spread-spectrum signal;  
4           an analog-to-digital converter (ADC) adapted to digitize the selectively attenuated analog spread-  
5           spectrum signal to generate a digital spread-spectrum signal;  
6           an interference-compensation filter adapted to filter the digital spread-spectrum signal in an  
7           attempt to compensate for interference in the received analog spread-spectrum signal to generate a  
8           filtered digital spread-spectrum signal;

9 a digital processor adapted to de-spread the filtered digital spread-spectrum signal to generate a  
10 de-spread digital signal; and

11 a controller adapted to control the variable attenuator based on the amplitude of the digital  
12 spread-spectrum signal prior to the interference-compensation filter and the digital processor, wherein the  
13 selectively attenuated analog spread-spectrum signal has a negative signal-to-noise ratio (SNR).

1 10. (original) The invention of claim 9, wherein the filter is adapted to attempt to  
2 compensate for off-channel interference in the received analog spread-spectrum signal.

1 11. (canceled)

1 12. (original) The invention of claim 9, wherein:  
2 the controller is adapted to control the variable attenuator to attenuate the received analog  
3 spread-spectrum signal when the amplitude of the digital spread-spectrum signal is greater than an upper  
4 threshold; and  
5 the controller is adapted to control the variable attenuator not to attenuate the received analog  
6 spread-spectrum signal when the amplitude of the digital spread-spectrum signal is less than a lower  
7 threshold, wherein the upper threshold is greater than the lower threshold.

1 13. (original) The invention of claim 12, wherein the upper threshold is greater than the  
2 lower threshold by an amount greater than the level of selective attenuation in order to provide hysteresis  
3 in the attenuation determination.

1 14. (original) The invention of claim 9, wherein:  
2 the received analog spread-spectrum signal is a radio frequency (RF) signal; and  
3 further comprising:  
4 a mixer adapted to convert the RF signal to an intermediate frequency (IF) prior to the  
5 digitization; and  
6 a digital downconverter adapted to convert the IF signal to baseband after digitization.

1 15. (original) The invention of claim 14, wherein the filter and the digital processor are  
2 adapted to operate at baseband.

1           16.     (currently amended) The invention of claim 9, wherein:  
2           the filter is adapted to attempt to compensate for off-channel interference in the received analog  
3 spread-spectrum signal;  
4           ~~the selectively attenuated analog spread-spectrum signal has a negative signal-to-noise ratio~~  
5 ~~(SNR);~~  
6           the controller is adapted to control the variable attenuator to attenuate the received analog  
7 spread-spectrum signal when the amplitude of the digital spread-spectrum signal is greater than an upper  
8 threshold;  
9           the controller is adapted to control the variable attenuator not to attenuate the received analog  
10 spread-spectrum signal when the amplitude of the digital spread-spectrum signal is less than a lower  
11 threshold;  
12           the upper threshold is greater than the lower threshold by an amount greater than the level of  
13 selective attenuation in order to provide hysteresis in the attenuation determination;  
14           the received analog spread-spectrum signal is a radio frequency (RF) signal;  
15           further comprising:  
16                 a mixer adapted to convert the RF signal to an intermediate frequency (IF) prior to the  
17 digitization; and  
18                 a digital downconverter adapted to convert the IF signal to baseband after digitization;  
19           and  
20           the filter and the digital processor are adapted to operate at baseband.

1           17.     (canceled)

1           18.     (previously presented) The invention of claim 1, wherein the attenuation determination  
2 is based on the amplitude of the digital spread-spectrum signal in a time domain.

1           19.     (previously presented) The invention of claim 6, wherein the attenuation determination  
2 is based on the amplitude of the digital IF signal.

1           20.     (previously presented) The invention of claim 1, wherein:  
2           the received analog spread-spectrum signal is attenuated when the amplitude of the digital  
3 spread-spectrum signal is greater than a first threshold;

4 the received analog spread-spectrum signal is not attenuated when the amplitude of the digital  
5 spread-spectrum signal is less than a second threshold, wherein the first threshold is greater than or equal  
6 to the second threshold;

7 a transition from the received analog spread-spectrum signal not being attenuated to the received  
8 analog spread-spectrum signal being attenuated occurs after the amplitude of the digital spread-spectrum  
9 signal is greater than the first threshold for a first specified amount of time; and

10 a transition from the received analog spread-spectrum signal being attenuated to the received  
11 analog spread-spectrum signal not being attenuated occurs after the amplitude of the digital spread-  
12 spectrum signal is less than the second threshold for a second specified amount of time.

1 21. (previously presented) The invention of claim 1, wherein the attenuation determination  
2 is further based on *a priori* knowledge of maximum expected interference-to-carrier ratio.

1 22. (new) In a spread-spectrum receiver, a method for processing a received analog spread-  
2 spectrum signal, comprising:

3 determining whether to attenuate the received analog spread-spectrum signal;

4 based on the attenuation determination, selectively attenuating the received analog spread-  
5 spectrum signal to generate a selectively attenuated analog spread-spectrum signal;

6 digitizing the selectively attenuated analog spread-spectrum signal to generate a digital spread-  
7 spectrum signal;

8 filtering the digital spread-spectrum signal in an attempt to compensate for interference in the  
9 received analog spread-spectrum signal to generate a filtered digital spread-spectrum signal; and

10 de-spreading the filtered digital spread-spectrum signal to generate a de-spread digital signal,  
11 wherein:

12 the attenuation determination is based on the amplitude of the digital spread-spectrum  
13 signal prior to the interference-compensation filtering and the de-spreading; and

14 the selectively attenuated analog spread-spectrum signal has a negative signal-to-noise  
15 ratio (SNR).

1 23. (new) In a spread-spectrum receiver, a method for processing a received analog spread-  
2 spectrum signal, comprising:

3 determining whether to attenuate the received analog spread-spectrum signal;

4 based on the attenuation determination, selectively attenuating the received analog spread-  
5 spectrum signal to generate a selectively attenuated analog spread-spectrum signal;

6                digitizing the selectively attenuated analog spread-spectrum signal to generate a digital spread-  
7 spectrum signal;  
8                filtering the digital spread-spectrum signal in an attempt to compensate for interference in the  
9 received analog spread-spectrum signal to generate a filtered digital spread-spectrum signal; and  
10              de-spreading the filtered digital spread-spectrum signal to generate a de-spread digital signal,  
11 wherein:  
12              the attenuation determination is based on the amplitude of the digital spread-spectrum  
13 signal prior to the interference-compensation filtering and the de-spreading; and  
14              the attenuation determination is further based on *a priori* knowledge of maximum  
15 expected interference-to-carrier ratio.